Bigneſs of the Horizontal Moon at different Times, adding alſo the Conſideration of the Faintneſs which Vapours ſometimes throw on the Appearance.

VI. *An* Explication *of the* Experiment *made in* May 1735, *as a farther Confirmation of what was ſaid in a Paper given in* January 30, 1734-5. *to account for the Appearance of the* horizontal Moon *ſeeming larger than when higher. By the Same.*

HAVING made an Experiment with three Ivory Balls for Confirmation of what I had advanced, namely, that the Deception ariſes from our judging the *horizontal Moon* to be much farther than it is; ſome Gentlemen of the Society were convinced by the Experiment, but others were not; which obliges me to give this further Account of it, that People may judge of the Thing in Writing, which could not be ſo well attended to in the Hurry of ſeveral Perſons viewing the Experiment in Haſte.

1. Two equal Ivory Balls were ſet one beyond another in reſpect of the Eye at E, namely, A B at 20 Feet Diſtance from the Eye, and C D at 40.

2. It is certain, by the Rules of Optics, that the Eye at E or F will ſee the Ball C D under an Angle but half as big as it ſees the Ball A B; that is, that the Ball C D muſt appear no bigger than the Ball o p placed by the Side of A B.

3. But

3. But when looking at the two Balls (Fig. 6.) with the naked Eye in an open Room, we conſider that C D is as far again from the Eye as A B, we judge it to be as big as A B, (as it really is) notwithſtanding it ſubtends an Angle but of half the Bigneſs.

4. Now if, unknown to the Spectator, (or while he turns his Back) the Ball C D be taken away, and another Ball *o p* of half the Diameter be placed in the ſame Line, but as near again, at the Side of A B, the Spectator thinking this laſt Ball to be at the Place of C D, muſt judge it to be as big as C D, becauſe it ſubtends the very ſame Angle as C D did before.

It follows therefore——That if a Ball be imagin'd to be as far again as it really is, we make ſuch an Allowance for that imagin'd Diſtance, that we judge it to be as big again as it is, notwithſtanding that the Angle under which we ſee it, is no greater, than when we look at it, knowing its real Diſtance.

For this Reaſon the Moon looks bigger in the Horizon, and near it, than at a conſiderable Height, or at the Zenith: Becauſe it being a common Prejudice to imagine that Part of the Sky much nearer to us which is at the Zenith, than that Part towards the Horizon; when we ſee the Moon at the Horizon, we ſuppoſe it much farther; therefore as it ſubtends the ſame Angle (or nearly the ſame Angle) as when at the Zenith, we imagine it ſo much bigger as we ſuppoſe its Diſtance greater.

The Reaſon why this Experiment is hard to make, is becauſe the Light from the Ball *o p* is too ſtrongly reflected on account of its Nearneſs; but if we could give it ſo little Light as to look no brighter than the Ball C D, it would deceive every body. I have made

the Experiment ſo as to deceive ſuch as were not very long-ſighted; but I muſt confeſs I have found it very hard to deceive thoſe who ſee at a great Diſtance; tho' they would all be deceiv'd, if the Diſtances were of 300 or 600 Foot. Now in the Caſe of the Moon, the Deceit is help'd, becauſe the Vapours, thro' which we ſee it when low, take away of its Brightneſs, and therefore have the ſame Effect as would (or does) happen in the Experiment, when the Light of the Ball *op* ſtrikes the Eye no ſtronger than the Light of the Ball C D.

VII. *A Letter from* Joſeph Atwell, *D. D. F. R. S. and Principal of* Exeter College, Oxford, *to Dr.* Mortimer, *R. S. Secr. containing ſome Obſervations on a* Man *and* Woman *bit by* Vipers.

Exeter College, Oxford, July 24, 1734

SIR,

THE Man who was lately bitten by a *Viper* in the Preſence of yourſelf and ſeveral Members of the *Royal Society*, having been recommended to ſome in this Place by Dr. *Oliver* of the *Bath*, I imagin'd that Sir *Hans Sloane* and you will be pleaſed with an Account of ſuch Experiments as have been made here. *July* 3d, the Man was bit in the Preſence of ſeveral beſides myſelf, in the public Hall of this College. He received two Punctures in the Wriſt, a little above the Thumb: The Blood iſſued, and more Venom lay upon